

Work Order ID 142731

Monday, March 21, 2016 2:41:48 PM

142731

Page 1

Item ID: D4095-041

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Wearplate Fwd

Start Date: 4/7/2016 Start Qty: 8.00

8

Cust Item ID:

Required Date: 4/15/2016 Req'd Qty: 8.00

8

Customer:

Reference:

Approvals: Process Plan: W Date: _____ Tooling: _____ Date: _____Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
D4095	C								

105

0.00

105

Purchasing

Memo

0.00

Purchasing

ISSUE PO 31297
CUT PER DRWG D4095 REV.C8 MAR 2-3 2016 DAS
13
9-89

115

Receive & Inspect for Damage & Mat'l Certs

0.00

115

Packaging

Memo

0.00

Packaging

SK Sp16-04-7

125

QC5- Inspect part completeness to step on W/O

0.00

125

QC

Memo

0.00

Quality Control

⑧ 16-04-13 DAS
9
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

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Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130		0.00							
130	NC BRAKE								
Brake NC	Memo	0.00				DAS 30 9-89	(8)		APR 27 2016
Brake NC	1- bend section C-C first 2- Form on Brake as per Dwg D4095 using Jigs DT 8179 and DT 8155 3- Form Joggles (2) as per Dwg D4095 on brake using Jig DT 8157								
140		0.00							
140	QC5- Inspect part completeness to step on W/O	0.00							
QC	Memo	0.00					(8)		DAS 38 9-89
Quality Control	Ensure joggle as per dwg D4095								APR 29 2016
150		0.00							
150	Weld per dwg & QSI004 4.5	0.00							
autoweld 1	Large Fab								
Automated Welding 1	Memo	0.00					8		EL/P/16-8-23
	SEE NOTE 10 FOR SURFACE BUILDUP								
	1- WELD AS PER DWG AND QSI004 4.5								
	FOR AUTOMATED WELDING USE 8259 HARDCOAT BATCH: 16134625								

DQA: _____ Date: _____



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Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QS1042) Approval 		
Description Work Order Deviation				Disposition					
							Completed By		
							Lead hand / Supervisor Approval Verification		
							QC / QA Coordinator Approval		

Root Cause				FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐		
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐		
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐		
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐		
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐		
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐		
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐		
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐		
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐		
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐		
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : ☐					
Misidentified ☐	Past Due ☐						

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Page 3

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Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
160	QC10- Inspect visual per QSI004- ground welds	0.00							
160									
QC	Memo	0.00				③	1606-27	PD	
Quality Control									
170	QC5- Inspect part completeness to step on W/O	0.00							
170									
QC	Memo	0.00				③	1606-27	PD	
Quality Control									
180		0.00							
180									
HandFinish	Memo	0.02				8			DAS 41 9.29
Hand Finishing	COAT ENTIRE TOP (CONCAVE) SURFACE WITH ROCKGUARD AS PER DWG A/R ROCKGUARD BATCH: <u>134811</u>								16-7-7

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

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Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
OTHER : ☐									

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Item Name: Wearplate Fwd

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Cust Item ID:

Required Date: 4/15/2016 Req'd Qty: 8.00

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Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start ***NR1***

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
190	QC3- Inspect Part Finish	0.00							
190									
QC	Memo	0.00							
Quality Control									
									JUL 08 2016
200	Identify as per dwg & Stock Location: <u>FP-002</u>	0.00							
200									
Packaging	Memo	0.00							
Packaging	LOCATION : FP002								
210	QC21- Final Inspection - Work Order Release	0.00							
210									
QC	Memo	0.01							
Quality Control									

Su 7/13/16

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____ Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

Picklist Print

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Page 1

Work Order ID: 142731

142731

Parent Item: D4095-041

D4095-041

Parent Item Name: Wearplate Fwd

Start Date: 4/7/2016

Required Date: 4/15/2016

Start Qty: 8.00

Required Qty: 8.00

Comments: IPP Rev:A new issue DD 10.04.26 verified by:EC
15.10.29 AUTOMATE WELDING DD VERF:JLM

IPP REV:B

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M304S16GA		Purchased	No			100	sf	115.4090	2.275	19.15789			DAS
M304S16GA									**			APR 01 2016	13 9-89

304/316 Sheet .063

Location

Loc Qty

Loc Code

MAT019

115.409

m134067

3.906

m134158

47.503

m134399

64

D4095-1-P

x8

SK

m134604

Sp/6-04-7

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval	

Root Cause			FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____				
Misidentified ☐	Past Due ☐					

DART AEROSPACE LTD		Work Order: 142731
Description: Wearplate		Part Number: D4095-1
Inspection Dwg: D4095	Rev: B	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
Ø0.19 ✓	+0.005/-0.001	.182	✓		PD 1	acc. drain hole
0.300 ✓	+/-0.010	.290	✓			
0.300 ✓	+/-0.010	.290	✓			
2.432 ✓	+/-0.010	2.445	✓			
3.227 ✓	+/-0.010	3.223	✓			
4.06 ✓	+/-0.030	4.06	✓			
4.98 ✓	+/-0.030	4.98	✓			
8.43 ✓	+/-0.030	8.43	✓			
9.22	+/-0.030					
3.500	+/-0.010					
24.750	+/-0.010					
11.50	+/-0.030					
11.472	+/-0.010					
6.002	+/-0.010	6.00	✓		tape	
12.102	+/-0.010	12.10	✓			
18.000	+/-0.010					
30.000	+/-0.010	30.00				
9.02	+/-0.030	9.00	✓			
36.000	+/-0.010	36.00	✓			
38.87 ✓	+/-0.030	38.87	✓			
2.50	+/-0.030					
0.063	+/-0.010	.056	✓		PD 1	
26.3	+/-0.062	26.3	✓		tape	
20.5	+/-0.062	20.5	✓		tape	

Measured by: DAS	Audited by:	Preliminary Approval:
Date: 16.04.18	Date:	Date:

Rev	Date	Change	Revised by	Approved
A	11.02.18	New Issue P/O D4095-041	KJ	
B	11.11.08	Dimensions updated per Dwg Rev B	KJ	

ITEM	QTY -041	QTY -043	QTY -045	QTY -047	QTY -049	QTY -051	PART NUMBER	DESCRIPTION
1	X						D4095-041	WEARPLATE ASSEMBLY
2		X					D4095-043	WEARPLATE ASSEMBLY
3			X				D4095-045	WEARPLATE ASSEMBLY
4				X			D4095-047	WEARPAD ASSEMBLY
5					X		D4095-049	WEARPAD ASSEMBLY
6						X	D4095-051	WEARPAD ASSEMBLY
7	1						D4095-1	WEARPLATE
8		1					D4095-3	WEARPLATE
9			1				D4095-5	WEARPLATE
10				1			D4095-7	WEARPAD
11					1		D4095-9	WEARPAD
12						1	D4095-11	WEARPAD

D4095-041/-043/-045/-047/-049/-051 NOTES:

- 1) MATERIAL: N/A
- 2) FINISH: COAT ENTIRE TOP (CONCAVE) SURFACE WITH TEXTURED COATING 0.02-0.04 THICK, PER DART QSI 005 4.9
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: N/A
- 6) IDENTIFICATION: IDENTIFY WITH DART P/N "D4095-0XX" AND B/N "BXXXXX" USING REMOVABLE TAG PER QSI 044 6.6
- 7) WEIGHT: D4095-041 = 3.08 lbs; D4095-043 = 3.08 lbs; D4095-045 = 2.00 lbs; D4095-047 = 0.48 lbs; D4095-049 = 0.42 lbs; D4095-051 = 0.37 lbs
- 8) PARTS ARE SYMMETRIC ABOUT CENTERLINE

SHIP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER

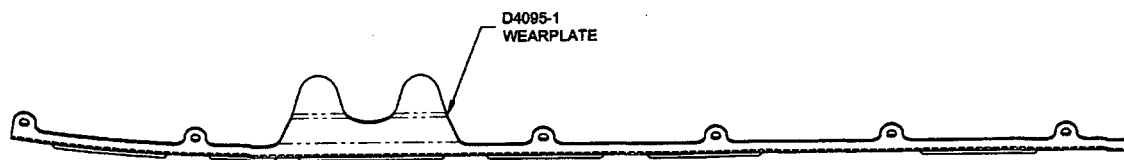
NO. 142731 MJS

1603-14

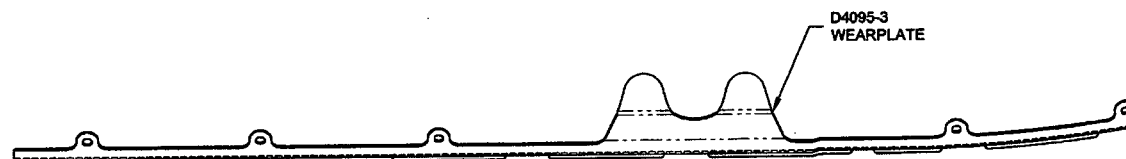
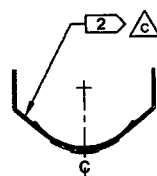
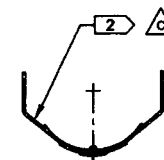
C	8259 WELD ROD WAS 2059B, 0.20 WELD THICKNESS WAS 0.25, MOVE DRAIN HOLE IN -1/3, 0.9 WAS 2.00 (TYPO B4-9), ADJUST TOL. FOR MANUFACTURABILITY, NOTE 2 NOW REF'S QSI 005 4.9, UPDATE MAT'L SPEC	CP	16.01.06
B	REVISED D4095-1A-1F/3/3F; 4715 PLUS ONE ROCK-GUARD REPLACES D4095-1/3; ADDED D4095-6/7 -9/-11; REVISED HARDCOAT DESIGN; REVISED NOTE 2	XDF	11.10.18
A	NEW ISSUE	MB	10.04.20
REV.	DESCRIPTION	BY	DATE
DESIGN			
DRAWN			
CHECKED			
MFG. APPR.			
APPROVED			
DE APPR.			
DATE	16.01.06		

DART AEROSPACE USA, INC EUGENE, OR	
DRAWING NO. D4095	REV. C SHEET 1 OF 9
TITLE WEARPLATE	SCALE NTS
COPYRIGHT © 2010 BY DART AEROSPACE USA, INC THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS UNDERSTANDING THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE USA, INC.	

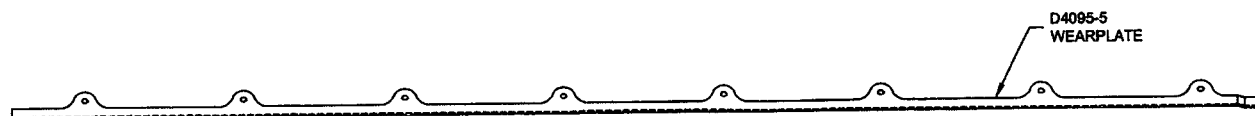
RELEASED
2016-01-11
ECN 16-504



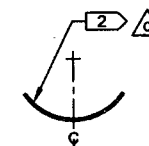
D4095-041 WEARPLATE ASSEMBLY



D4095-043 WEARPLATE ASSEMBLY

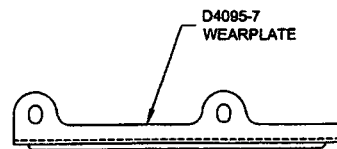


D4095-045 WEARPLATE ASSEMBLY

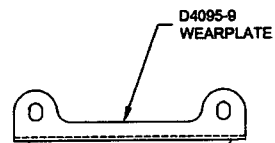
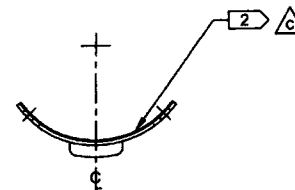


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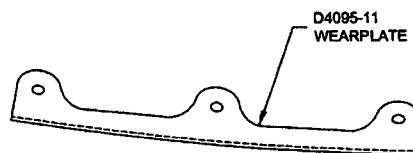
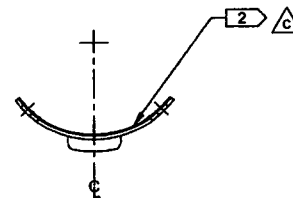
DESIGN		DART AEROSPACE USA, INC	
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CHECKED		DRAWING NO.	REV. C
MFG. APPR.		D4095	SHEET 2 OF 8
APPROVED		TITLE	SCALE
DE APPR.		WEARPLATE	NTS
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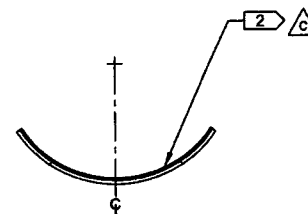
D4095-047 WEAR PAD ASSEMBLY



D4095-049 WEAR PAD ASSEMBLY

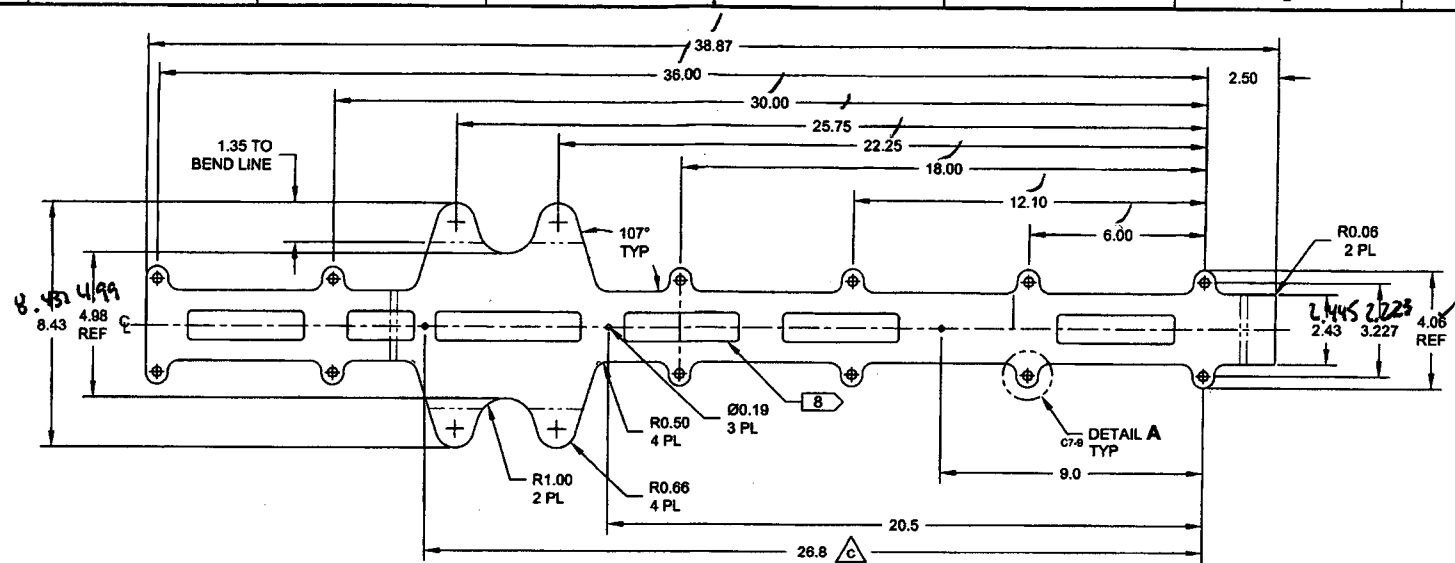


D4095-051 WEARPAD ASSEMBLY

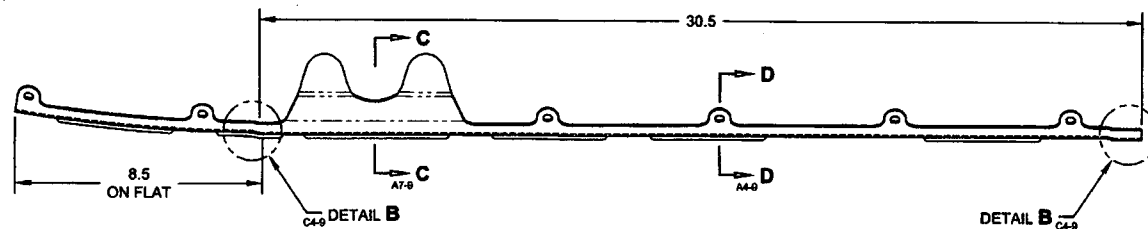


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D4095-1F FLAT PATTERN 1



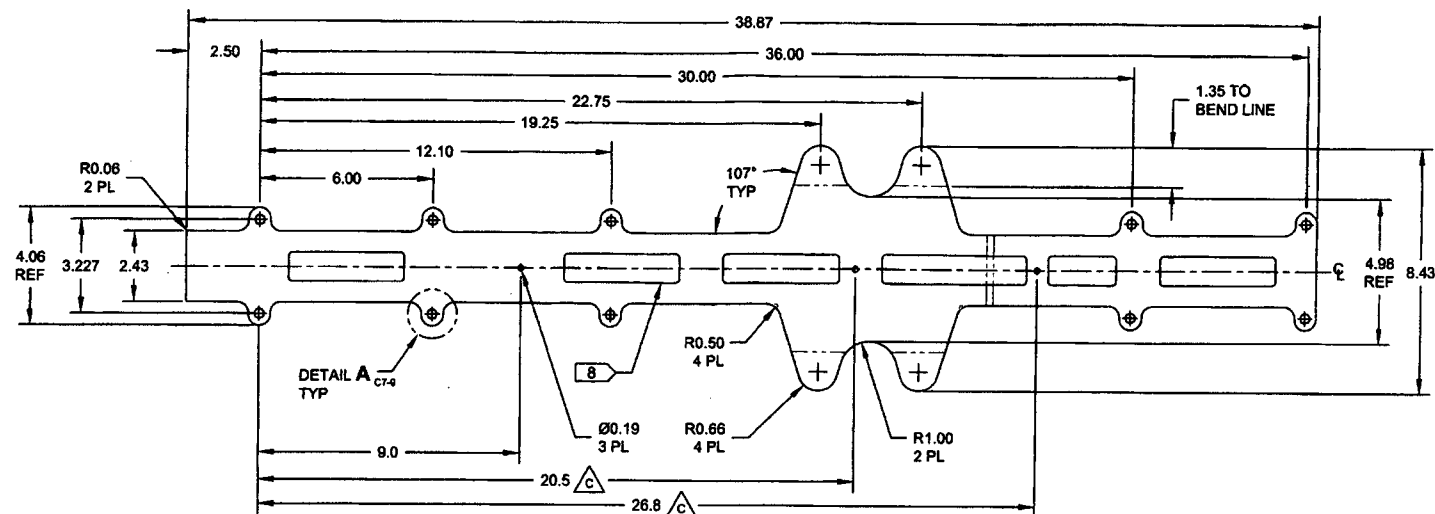
D4095-1 BENDING DETAIL
(MAKE FROM D4095-1F)

D4095-1 NOTES:

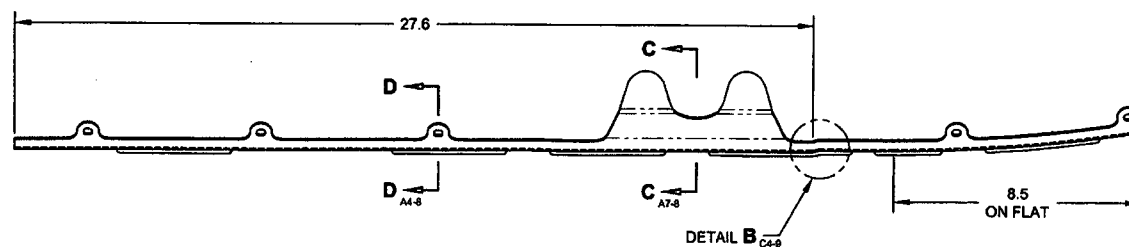
- 1) MATERIAL: AISI 304/316 SS SHEET ANNEALED 2B FINISH, 16 GAUGE (0.063 THICK)
PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316), OR ASTM A240
OR ASME SA240 REF DART MATERIAL SPEC M304S16GA
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.015 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: N/A
- 8) WELDING: BUILDUP HARD SURFACING 0.17 TO 0.20 THICK USING 8259 ROD PER QSI 004 SECTION 4.5
- 9) PARTS ARE SYMMETRIC ABOUT CENTERLINE

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D4095-3F FLAT PATTERN 1



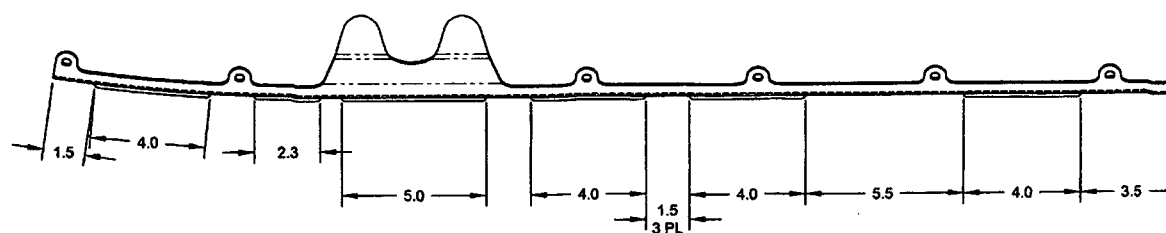
D4095-3 BENDING DETAIL
(MAKE FROM D4095-3F)

D4095-3 NOTES:

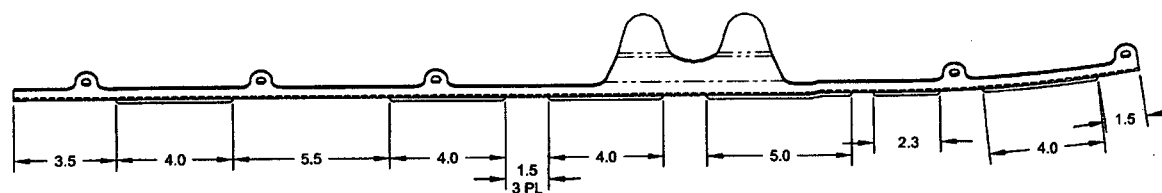
- 1) MATERIAL: AISI 304/316 SS SHEET ANNEALED 2B FINISH, 16 GAUGE (0.063 THICK) PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316), OR ASTM A240 OR ASME SA240 REF DART MATERIAL SPEC M304S16GA
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.015 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: N/A
- 8) WELDING: BUILDUP HARD SURFACING 0.17 TO 0.20 THICK USING 8259 ROD PER QSI 004 SECTION 4.5
- 9) PARTS ARE SYMMETRIC ABOUT CENTERLINE

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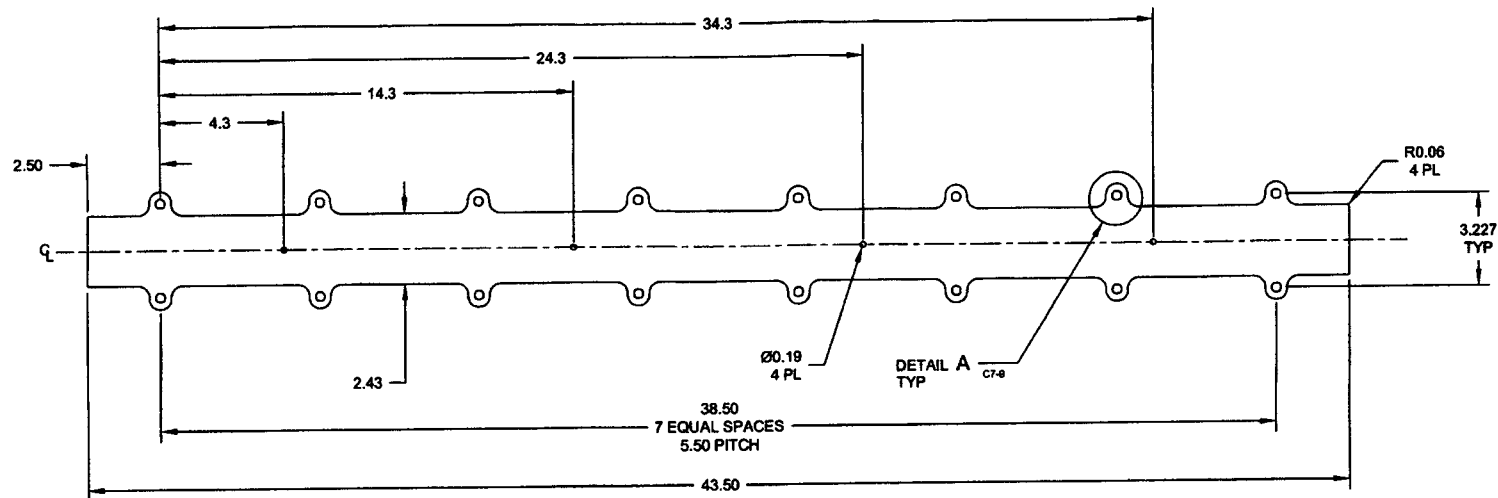
D4095-1 WELDING DETAIL



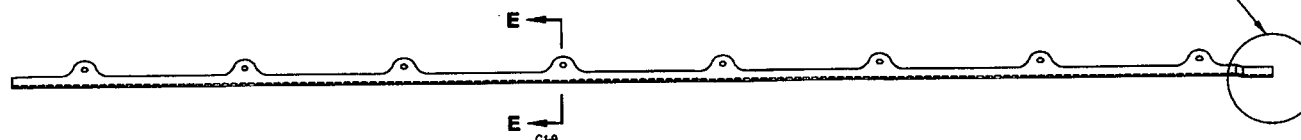
D4095-3 WELDING DETAIL

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D4095-5F FLAT PATTERN 1



D4095-5 BENDING DETAIL
(MAKE FROM D4095-5F)

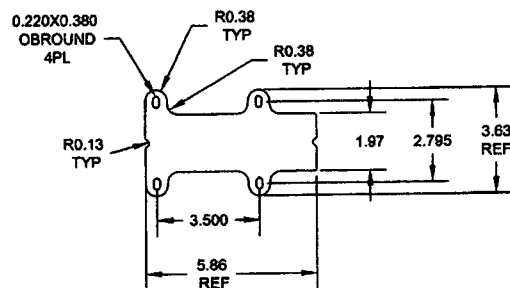
D4095-5 NOTES:

- 1) MATERIAL: AISI 304/316 SS SHEET ANNEALED 2B FINISH, 16 GAUGE (0.063 THICK)
PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316), OR ASTM A240
OR ASME SA240 REF DART MATERIAL SPEC M304S16GA
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.015 MAX
- 6) IDENTIFICATION: N/A
- 7) WEIGHT: N/A
- 8) WELDING: BUILDUP HARD SURFACING 0.17 TO 0.20 THICK USING 8259 ROD PER QSI 004 SECTION 4.5
- 9) PARTS ARE SYMMETRIC ABOUT CENTERLINE

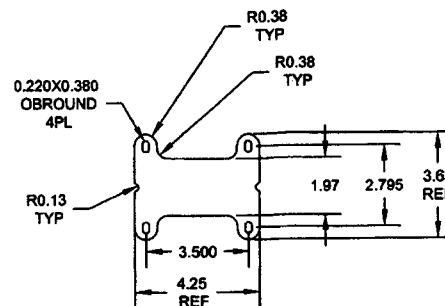
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MFG. APPR.		D4095 SHEET 7 OF 9
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DE APPR.		WEARPLATE NTS
DATE	16.01.06	

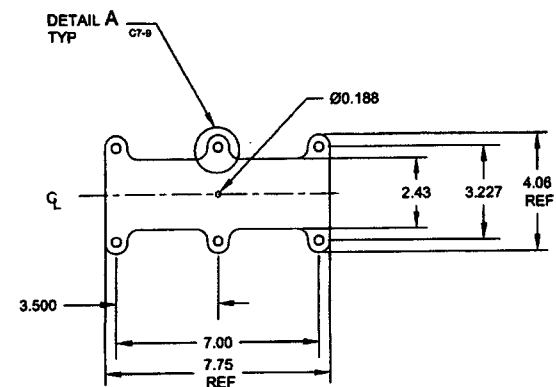
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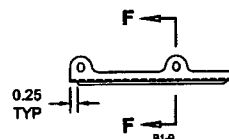
D4095-7F FLAT PATTERN 1



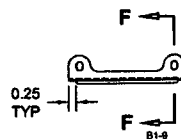
D4095-9F FLAT PATTERN 1



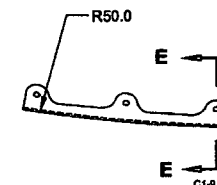
D4095-11F FLAT PATTERN 1



D4095-7 LONGITUDINAL BEND
(MADE FROM D4095-7F)



D4095-9 LONGITUDINAL BEND
(MADE FROM D4095-9F)



D4095-11 BENDING DETAIL
(MAKE FROM D4095-11F)

D4095-7/-9/-11 NOTES:

1) MATERIAL: AISI 304/316 SS SHEET ANNEALED 2B FINISH, 16 GAUGE (0.063 THICK)
PER MIL-S-5059 OR AMS 5513 (304) OR AMS 5524 (316), OR ASTM A240
OR ASME SA240 REF DART MATERIAL SPEC M304S16GA

2) FINISH: NONE

3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED

4) UNITS: INCHES UNLESS OTHERWISE NOTED

5) BREAK SHARP EDGES: 0.005 TO 0.015 MAX

6) IDENTIFICATION: N/A

7) WEIGHT: N/A

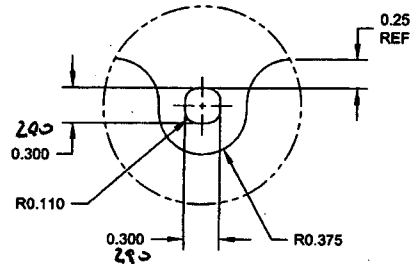
8) WELDING: BUILDUP HARD SURFACING 0.17 TO 0.20 THICK USING 8259 ROD PER QSI 004 SECTION 4.5

9) PARTS ARE SYMMETRIC ABOUT CENTERLINE

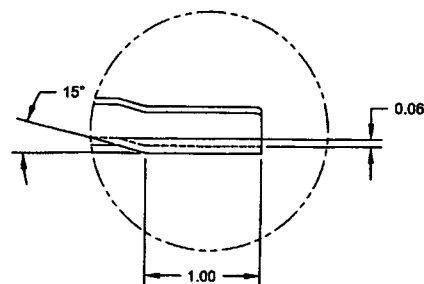
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DE APPR.		WEARPLATE NTS
DATE	16.01.06	

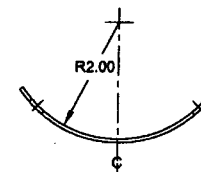
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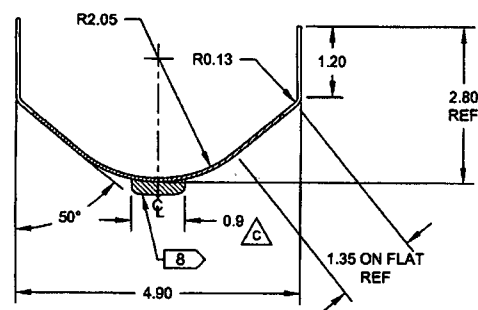
DETAIL A: TAB DETAIL
SCALE 4X
C3-3
C6-6
D3-7
D2-6



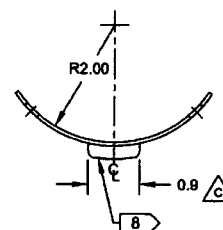
DETAIL B: JOGGLE DETAIL
SCALE 4X
B2-4
B6-4
B3-6
B2-7



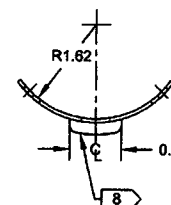
SECTION E-E
SCALE 2X
B5-7
B2-6



SECTION C-C
SCALE 2X
B5-4
B4-6



SECTION D-D
SCALE 2X
B4-4
B5-6



SECTION F-F
SCALE 2X
B5-6
B7-6

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Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID PO31797

Purchase Order Date 3/23/2016

PO Print Date 3/23/2016

Page Number 3 of 7

Order From :

VC-TPI001

TPI INDUSTRIES INC.
148 RUE GOODFELLOW
DELSON, QUEBEC J5B 1V4
CANADA

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

Contact Name
Vendor Phone 450-633-0484

Ship To Contact
Ship To Phone
Ship Via:
Ship Acct:

Buyer Chantal Lavoie
Customer POID
Customer Tax # 10127-2607
Terms Net 30
Currency CAD
FOB Destination-Collect

Line Total: \$240.00

6	D3564-5P	Wearplate Center	4/20/2016 FN	6.00	\$27.00	\$162.00
			Yes	Each		
			4/20/2016			

CUT AS PER DWG D3564 REV. D
B142890
MATERIAL 304 SHEET 16GA

Line Total: \$162.00

7	D4095-1P	Wearplate	4/20/2016	6.00	\$27.00	\$162.00
			Yes	Each		
			4/20/2016			

CUT AS PER DWG D4095 REV. C
B142731
MATERIAL 304 SHEET 16GA

Line Total: \$162.00

recu 8x
sp/16-4-7

8	D4918-7P	Wearplate Aft	4/20/2016 FN	4.00	\$10.15	\$40.60
			Yes	Each		
			4/20/2016			

CUT AS PER DWG D4917 REV. A
B143787
MATERIAL 304 SHEET 16GA

Note:

3/23/2016

T.P.I. INDUSTRIES INC.

148 GOODFELLOW
DELSON, QUÉBEC J5B 1V4
CANADA
Tel: (450) 633-0484
Fax: (450) 633-0879

Packing Slip

Packing Slip No.: 7442
Date: 2016-04-05
Page: 1

Sold to:	Ship to:
Dart Aerospace Chantal Lavoie 1270 Aberdeen Hawkesbury, Ontario K6A 1K7 Canada	Dart Aerospace Chantal Lavoie 1270 Aberdeen Hawkesbury, Ontario K6A 1K7 Canada
Order No.: 31797	Sold By: JONATHAN LESSARD
Shipped By:	Ship Date: 2016-04-05
Tracking No.:	

Item No	Unit	Description	Quantity
d2947	Chaque	d2947 clamp	90
d3537-1	Chaque	d3537-1 wearpad	40
d3564-11	Chaque	d3564-11 wearplate	10
d3564-5	Chaque	d3564-5 wearplate	6
d4095-041	Chaque	d4095-041 wearplate assy	8
d4095-045	Chaque	d4095-045 wearplate assy	8
d4095-047	Chaque	d4095-047 wearplate assy	4

Sp16-04-7

Comment: Net / 30 from date of invoice 2% svc. chg. on invoices over 30 days

THYSSENKRUPP MATERIALS NA

DART AEROSPACE

STAINLESS STEEL SHEET 304L-2B DUAL GRADE
".0600 Nom X 48.0000" X 96.0000"
PART NO.

PO/Rel 31741

We certify that this is a true copy of the report
furnished by the producer of the metal, or data
resulting from tests made in approved labs.

Certificate of Mill Test Results

BL PEC-983229-003

21Mar16

Pg 1/1



METALLURGICAL TEST REPORT

North American Stainless Canada Inc.
740 Imperial Road North
Guelph, ON N1K1Z3
Canada

740 Imperial Road North

Certificate: 120157 1 Mail To:
Customer: 007206 001 THYSSENKRUPP MATERIALS
2821 LANGSTAFF ROAD
CONCORD, ON L4K5C6

Ship To:
THYSSENKRUPP MATERIALS
2821 LANGSTAFF ROAD
CONCORD, ON L4K5C6

Date: 12/03/2015 Page: 1

Steel: 304/304L

Finish: 2B

Corrosion: ASTM A262/14;18Obend-OK

Your Order: PEC271093

NAS Order: WN 0072789 03

PRODUCT DESCRIPTION:

STAINLESS STEEL COIL, C.R. ANNEALED & PICKLED. UNS 30400/30403
ASTM A240/15a,A480/14b,A666/15;ASME SA240/13,SA480/13,SA666/13
CHEM ONLY ON FOLLOWING ASTM: A276/13,A479/13a,A484/13a,A312/13
CHEM ONLY ON FOLLOWING ASME: SA312/13,SA479/13
AMS 5511H/5513J XMRR; MIL-5059D AMD3(X CRN MEAS); MIL-4043B
NACE MR0175/ISO 15156-3:2009 A, MR0103/07;Q98766D-A X MAG PERM
MIN. SOLUTION ANNEAL TEMP 1900F, WATER QUENCHED

REMARKS:

Mat'l is Free of Mercury Contamination. No weld repairs.
EN 10204:2004 3.1; RoHS 1 & 2 Compliant
Material is Free of Radioactive Contamination
Steel Making Process: EAF, AOD, & Cont. Casting
Product Mfg.by a Quality Mgt.Sys. in Conf. w/ISO 9001
*Melted & Manufactured in the USA; Mat'l is DFARS Compliant

Product Id	Coil #	Skid #	Thickness	Width	Weight	-----Length-----	Mark	Pieces	Commodity Code
05X1X2 CA	05X1X2 C		.0575	48.0000	4,950	SHEETS	096.00	64	

CHEMICAL ANALYSIS

CM(Country of Melt) ES(Spain) US(United States) ZA(South Africa) JP(Japan)

Lab Accreditation Bureau, ISO/IEC 17025, Certificate# L2323

Chemical Analysis per ASTM A751/08

HEAT	CM	C %	CR %	CU %	MN %	MO %	N %	NI %	P %	S %
X1X2	US	.0216	18.2925	.3910	1.7545	.5130	.0897	8.0095	.0275	.0031
SI %										
.2670										

MECHANICAL PROPERTIES

Product Id#	Coil #	1 d o i c r	UTS KSI	20C .2% YS KSI	20C ELONG %-2"	% Hard RB	Tail Hard
05X1X2 CA	05X1X2 C	F T	97.24	49.89	47.19	87.00	85.00

NAS hereby certifies that the analysis on this certification is correct. Based upon the results and the accuracy of the test methods used, the material meets the specifications stated. These results relate only to the items tested and this report cannot be reproduced, except in its entirety, without the written approval of NAS.

Technical
Dept. Mgr.

A. B. Shaw